AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of ~~eliminating sidelobes~~ confirming frame synchronization in a communication channel between a base station and a mobile station~~, comprising the steps of~~:

(a) generating control signals and data signals within the communication channel, said control signals having a first sequence of L-bits and a second sequence of L-bits;

(b) autocorrelating the first and second sequences to generate first and second autocorrelated values;

(c) cross-correlating the first and second sequences to generate fist and second cross-correlated values; and

(d) combining the first and second autocorrelated values and the first and second cross-correlated values.

2. (Original) The method of claim 1, wherein lowest out-of-phase coefficients of the autocorrelation function is -4.

3. (Original) The method of claim 1, wherein a result of step (d) comprise maximum peaks at zero and middle time shifts, which are equal to each other and opposite in polarity.

4. (Original) The method of claim 1, wherein the communication channel includes a frame having L number of slots, wherein step (d) allows at least one of slot-by-slot frame synchronization, channel estimation, double check frame synchronization and single frame synchronization.

5. (Original) The method of claim 1, wherein each of said first and second sequences of L-bits includes a first prescribed number (b_0) of bit values equal to "0" and a second prescribed number (b_1) of bit values equal to "1", wherein b_1-b_0 is +1 or -1.

6. (Original) The method of claim 1, wherein the communication channel comprises a plurality of frames, each frame having L number of slots and each slot has N number of pilot bits such that there are N number of sequences of L-bits in a frame, said first and second sequences being sequences of the N number of sequences.

7. (Original) The method of claim 3, wherein the maximum peak at zero time shift is a first prescribed number*L, and the maximum peak at middle time shift is -(prescribed number*L).

8. (Original) The method of claim 6, wherein between adjacent sequences, there are a prescribed number b_3 of bit values which are the same and there a prescribed number b_4 of bit values which are different such that b_3-b_4 is +1 or -1.

9. (Original) The method of claim 6, wherein said control signals include a third sequence of L-bits and a fourth sequence of L-bits, and further comprising the steps of:

autocorrelating the third and fourth sequences to generate third and fourth autocorrelated values; and

cross-correlating the third and fourth sequences to generate third and fourth cross-correlated values, wherein the combining step comprises combining the first, second, third and fourth autocorrelated values and the first, second, third and fourth cross-correlated values.

10. (Original) The method of claim 9, wherein the sequences used for frame synchronization are members of a family of i sequences.

11. (Original) The method of claim 10, wherein i=8, L=15 and N=2 to 32, each frame having a period of 10ms and each slot having a period of about 0.667ms.

12. (Original) The method of claim 9, wherein step (d) comprises adding the first, second, third and fourth autocorrelated values and adding the first, second, third and fourth cross-correlated values.

13. (Canceled)

14. (Canceled)

15. (Currently Amended) A method of ~~reducing sidelobes~~ confirming frame synchronization~~, comprising the steps of~~:

generating a plurality of frame words, each frame word having a plurality of bits;

performing autocorrelation functions on a pair of frame words to generate a pair of autocorrelated value sets;

~~preforming~~ performing cross-correlation function on a pair of frame words to generate a pair of cross-correlated value sets; and

combining the pair of aotucorrelated value set and cross-correlated value sets such that two peak values equal in magnitude and opposite in polarity are achieved at zero and middle time shifts.

16. (Currently Amended) A method of generating pilot signals of a prescribed pattern within a frame having 15 slots~~, comprising the steps of~~:

generating N pilot bits for each slot; and

forming N words of 15-bit based on above generating step, wherein each of a prescribed number of N words has a first prescribed number b0 of bit values of "0" and a second prescribed number b_1 of bit values of "1", such that b_1-b_0 is +1 or -1.

17. (Canceled).